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D B Peck  
Name (Print)

D B Peck  
Signature

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Customer No.:



07278

PATENT TRADEMARK OFFICE

Docket No: 2650/1F966

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Richard D. Granstein

Serial No.: 09/679,776

Art Unit: 1632

Confirmation No.:

Filed: October 5, 2000

Examiner: J. Li

For: PROTECTIVE IMMUNITY OR IMMUNOLOGICAL TOLERANCE INDUCED WITH RNA, PARTICULARLY TOTAL CELLULAR RNA

DECLARATION UNDER RULE 132

Hon. Commissioner of  
Patents and Trademarks  
Washington, DC 20231

September 20, 2001

Sir:

I, Richard D. Granstein, declare that:

1. I am a citizen of the United States and reside in Scarsdale, New York.

2 I received an M.D. from the University of California School of Medicine in 1978.

3 I am currently the Chairman of Dermatology at Weill Medical College of Cornell University, New York, the assignee of the above-identified U.S. patent application, where I have been employed since 1995. My curriculum vitae is attached as Exhibit 1. I am a specialist in dermatology and immunology.

4 I am the named inventor of the above-identified U.S. patent application.

5. The following experiment was conducted either by me or under my direction and control.

A. Ten (10) CAF1 mice were injected intravenously (i.v.) with 100 mg of total cellular RNA from the S1509a spindle cell tumor line.

B. Control animals were injected i.v. with irrelevant RNA from the NS cell line or saline alone.

C. One week after i.v. injection, the mice were sacrificed and the spleen cells were harvested.

D. A single cell suspension of splenic lymphoid cells was prepared.

E.  $10^8$  splenic lymphoid cells were injected into each of naïve CAF1 mice.

F. All mice were then immunized to the S1509a tumor by subcutaneous injection of disrupted S1509a cells three times at weekly intervals.

G. One week after the last immunization, syngenic epidermal cells enriched for

Langerhans cell content (eEC) by antibody- and complement-mediated deletion of Thy-1-bearing cells were pulsed with a soluble extract of the S1509a cells as a source of tumor-associated antigens (TAA).

H. TAA-pulsed eEC were then injected into a footpad of each mouse.

I. Twenty-four hour footpad swelling was assessed as a measure of DTH with a spring-loaded micrometer.

J. Mice that received splenic lymphoid cells from animals primed intravenously with RNA derived from the S1509a tumor demonstrated a significantly( $p < 0.001$ ) decreased delayed-type hypersensitivity (DTH) response ( $31 \times 0.01$  mm  $\pm$  1.9 [SEM]) compared to mice given spleen cells from mice primed i.v. with saline ( $49 \times 0.01$  mm  $\pm$  2.4[SEM]) or unrelated NS-RNA ( $43.3 \times 0.01$  mm  $\pm$  1.9 [SEM]).

K. These results demonstrate that the suppression of the DTH response to S1509a derived TAA induced by i.v. administration of total cellular RNA from the S1509a spindle cell tumor line can be transferred with spleen cells.

6. I declare further that statements made in this Declaration are of my own knowledge and are true and that all statements made on information and belief are believed to be true and further these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 9/29/01

  
RICHARD. D. GRANSTEIN

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Serial No. 09/679,776

Rule 13.2 Declaration for Response to Office Action dated June 20, 2001

Docket No. 2650/1F966-US2

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Richard D. Granstein, M.D.

.CURRICULUM VITAE

Name: Richard D. Granstein  
Address: 70 High Point Road, Scarsdale, New York 10583  
Place of Birth: Detroit, Michigan  
Education:  
of 1974 B.S. Massachusetts Institute of Technology  
1978 M.D. University of California, Los Angeles, School  
Medicine

Postdoctoral Training:

Internship and Residencies

1978 - 1979 Intern in Medicine, Harbor-UCLA Medical Center,  
Torrance, California  
1979 - 1981 Resident in Dermatology, Massachusetts General  
Hospital, Boston, Massachusetts

Research Fellowships

1981 - 1982 Research Fellow, Cancer Biology Program,  
NCI-Frederick Cancer Research Facility,  
Frederick, Maryland  
1982 - 1984 Clinical and Research Fellow in Dermatology,  
Massachusetts General Hospital, Boston, Massachusetts

Licensure and Certification:

1979 Diplomate, National Board of Medical Examiners  
1979 California License Registration  
1981 Massachusetts License Registration  
1981 Maryland License Registration  
1983 Diplomate, American Board of Dermatology  
1985 Special Qualification, Dermatologic  
1995 Immunology/Diagnostic and Laboratory Immunology  
New York License Registration

Academic Appointments:

1979 - 1981 Clinical Fellow in Dermatology, Harvard Medical  
School, Boston, Massachusetts  
1982 - 1984 Clinical and Research Fellow in Dermatology, Harvard  
Medical School, Boston, Massachusetts  
1984 Instructor in Dermatology, Harvard Medical School,  
Boston, Massachusetts  
1984 - 1990 Assistant Professor of Dermatology, Harvard Medical

Richard D. Granstein, M.D.

1990 - 1996 1996 - 1997 Medical School, Dermatology and Medical College	School, Boston, Massachusetts Associate Professor of Dermatology, Harvard Medical School, Boston, Massachusetts Lecturer in Dermatology, Harvard  Boston, Massachusetts George W. Hambrick, Jr. Professor of Chairman, Department of Dermatology, Weill of Cornell University New York, New York
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Hospital Appointments:

1984 - 1987 1984 - 1990 Hospital 1987 - 1990 Hospital 1990 - 1995 Hospital 1994 - 1995 York-Presbyterian Hospital (New York New York	Assistant in Dermatology, Massachusetts General Hospital, Boston, Massachusetts Assistant in Medicine (Dermatology), Children's Hospital Medical Center, Boston, Massachusetts Assistant Dermatologist, Massachusetts General Associate Dermatologist, Massachusetts General Associate Chief of Dermatology for Research, Massachusetts General Hospital 1995 - Dermatologist-in-Chief, New Weill Cornell Campus), New
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Other Professional Activities:

1985 Society,  1986 Meeting of Washington,  1987 Annual Dermatology,  1987 Case  1987 Francisco,  1988 New York  1989 Annual	Invited Lecturer, New England Dermatology Providence, Rhode Island Co-chairman, Photobiology Session, Annual the Society for Investigative Dermatology, D.C. Co-chairman, Immunologic Cytokines Session, Meeting of the Society for Investigative San Diego, California visiting Professor, Department of Dermatology, Western Reserve University, Cleveland, Ohio Invited Lecturer, Genentech, Inc., South San California Invited Lecturer, Department of Dermatology, University, New York, New York Co-chairman, AAP/ASCI/AFCR/SID Joint Session,
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Richard D. Granstein, M.D.

Meeting of the American Federation for Clinical Research, Washington, DC  
Plenary Lecturer, 4th Immunodermatology Symposium, 1989

Amsterdam, The Netherlands  
Invited Lecturer, International Dermatologic Symposium, 1989

Federal on Interferons and Related Cytokines, Berlin, Republic of Germany  
Consultant, Genentech, Inc., So. San Francisco, California, 1989-1994

1990 Visiting Professor, Department of Dermatology, University of California, San Francisco School of Medicine

of 1990 Visiting Professor, Department of Dermatology and Medical Grand Rounds Lecturer, The University of

of Toronto, Ontario, Sunnybrook Health Science Centre, 1991

Toronto, Ontario  
Stanford University, Invited Lecturer, Department of Dermatology, Palo Alto, California

Richard D. Granstein, M.D.

- 1991 Chairman, Growth Factors, Cytokines and Receptors  
Minisymposium, Annual meeting of the Society for  
Investigative Dermatology
- 1992 Guest Editor, *Chemical Immunology*
- 1993 Chairman, Symposium on Photoprotection, Dermatology
- 2000 Congress, Vienna, Austria
- 1993 Invited Lecturer, Department of Dermatology,  
University of Muenster,  
Muenster, Germany
- 1993 Co-Chairman, Minisymposium on Cytokines,  
Tricontinental  
Meeting of the Japan Society for Investigative  
Dermatology, The  
Society for Investigative Dermatology and the  
European Society for  
Dermatologic Research, Kyoto, Japan
- 1993 Invited Lecturer, Shiseido Co., Ltd.,  
Yokohama, Japan
- 1994 Invited Lecturer, Year in Medicine, Clinical  
Research Meeting  
(AAP/ASCI/AFCR), Baltimore, Maryland
- 1994 Plenary Lecturer, New Trends in Immunopharmacology
- 1994, Tokyo, Japan
- 1994 Invited Lecturer for Grand Rounds, University of  
Michigan Cancer  
Center, Ann Arbor, Michigan
- 1995 Visiting Professor, Division of Dermatology,  
University of California,  
Los Angeles School of Medicine, Los Angeles,  
California
- 1995 Invited Lecturer for Grand Rounds, Department of  
Dermatology,  
New York University School of Medicine, New York,  
New York
- 1995 Invited Lecturer, Symposium on Photocarcinogenesis:  
Mechanisms,  
Models and Human Health Implications, Washington,  
DC
- 1995- Consultant, Connetics, Palo Alto,  
California
- 1996 Plenary Lecturer, Dermatology 2000 Congress,  
Vancouver,  
British Columbia, Canada
- 1996 Co-chairman, Symposium on Nerves, Neuropeptides and  
the Skin,  
Annual Meeting of The Cutaneous Biology Foundation,  
Aspen, Colorado
- 1996 Dermatology 2000 Congress, Vancouver, British  
Columbia, Canada
- 1996 Invited Lecturer, New York Biotechnology  
Association, New York,  
New York
- 1996 Invited Lecturer, Estee Lauder, Inc., Melville, New

Richard D. Granstein, M.D.

York  
1996 Invited Lecturer, Department of Dermatology Grand  
Rounds, Albert Einstein College of Medicine, New York, New  
York  
1996- Consultant, Alza Corporation, Palo Alto,  
California  
1997 Invited Lecturer, Department of Surgery, New York  
Hospital-Cornell  
1997 Medical Center, New York, New York  
1997 Invited Lecturer, Department of Hematology and  
Oncology Grand Rounds, Cornell University Medical  
College, New York,  
New York  
1997 Invited Lecturer, General Motors Cancer Research  
Foundation Annual  
Conference, Bethesda, Maryland  
1997 Invited Lecturer, Shiseido Co., Ltd., Yokohama,  
Japan  
1997 Visiting Professor, Department of Dermatology, Yale  
University School of  
Medicine  
1998 Invited Lecturer, Johnson & Johnson Skin Biology  
Research Center,  
Skillman, New Jersey  
1998 Invited Lecturer, Estee  
Lauder, Melville, New York  
1998 Invited Lecturer, Department of Dermatology, Duke  
University, Durham,  
North Carolina  
1998 Invited Lecturer, American Academy  
of Allergy, Asthma and Immunology, Washington, DC  
1998 Invited Lecturer, Department of Dermatology,  
University of Cincinnati,  
Cincinnati, Ohio  
1998 Invited Lecturer, Advances in Cancer  
Research, Cornell University Medical  
College, New York, New York  
1998 Invited Lecturer, Dermatology Foundation, Winter  
Dermatology Colloquium,  
Pebble Beach, California  
1998 Invited Lecturer, Atlantic Dermatological  
Conference, New York, New York  
1998 Invited Lecturer, Update Your Medicine Lecture  
Series, New York Hospital-Cornell Medical Center,  
New York, New York  
1998 Invited Lecturer, Seminars in Clinical Research,  
Rockefeller University, New York, New York  
1998 Invited Lecturer, Seventh Annual R. William Gange  
Lecture, Department of Dermatology, Massachusetts  
General Hospital, Boston, Massachusetts  
1998 Invited Lecturer, Department of Dermatology and  
Cutaneous Biology Grand Rounds, Thomas Jefferson  
University School of Medicine, Philadelphia,

Richard D. Granstein, M.D.

	Pennsylvania
1999	Invited Lecturer, Visiting Scholar Program, Skin Diseases Research Center, Department of Dermatology, Columbia University, New York, New York
1999	Visiting Professor, Department of Dermatology, State University of New York Health Science Center at Brooklyn, Brooklyn, New York
1999	Visiting Professor, Department of Dermatology, University of Michigan Medical School, Ann Arbor, Michigan
1999	Visiting Professor, Department of Dermatology, University of Louisville, Louisville, Kentucky
2000	Invited Lecturer, Department of Dermatology, New York Medical College, Valhalla, New York
2000	Plenary Lecturer at Annual Meeting of the American Academy of Dermatology, Dialogues in Dermatology, <i>Reflections on Our Past, Visions for Our Future – Dermatology Research</i> , San Francisco, CA
2000	Visiting Professor, Department of Dermatology, Columbia University College of Physicians and Surgeons, New York, New York
2001	Invited member, Extramural Roundtable on Skin, NIAMS, Bethesda, Maryland
2001	Visiting Professor, Department of Dermatology, University of Texas, Southwestern Health Science Center, Dallas, Texas

#### Awards and Honors:

1965	Eagle Scout
1972	Associated Western Universities Undergraduate Research Program
1973	Phi Lambda Upsilon
1978	Alpha Omega Alpha
1982	Dermatology Foundation Fellowship Recipient
1983	National Research Service Award

#### Major Committee Assignments:

1986 - 1989	Scientific Advisory Committee to the Research	Mallinckrodt General Clinical Center, Massachusetts General Hospital, Boston, Massachusetts NIH Site Visit Committee,
1987 Program		Project Grant Review, New York University, New York, New York Radiation Safety Committee, Massachusetts General Hospital, Boston, Massachusetts
1988 - 1993		

Richard D. Granstein, M.D.

1988 - 1991	Admissions Committee, Harvard Medical School,
	Boston, Massachusetts
1989 - 1993	Committee on Research,
Massachusetts General	Hospital
	Subcommittee on Animal Care,
	Protocol Review Group, Massachusetts General Hospital, Boston,
	Massachusetts
1989 - 1993	Chairman, Subcommittee on Animal Care, Protocol Review Group, Massachusetts General Hospital, Boston, Massachusetts
	1992 - NIH Reviewers Reserve
1992	NIH Site Visit Committee, Program Project Grant Review, New York University, New York, New York
	Ad Hoc Reviewer, NIH General
1992	Medicine A1 Study
	Section, Naples, Florida
1994	Ad Hoc Reviewer, NIH General
Medicine A1 Study	Section, Washington, D.C.
	Chairman, External Advisory
1995	Evaluation of Research, Hospital
Committee for	New York, New York
	Chairman, Advisory
for Special Surgery,	Core Facility, Cornell University
	New York, New York
1996-	Committee to the Gene Therapy
Committee to the Gene Therapy	Chairman, Advisory
Medical College,	Core Facility, Cornell University
	New York, New York
1997-2000	Committee of Review of the Medical
College, Cornell	University Medical College
	Ad Hoc Committee to Review
1997	Cornell University Medical College
Departmental structure,	Chairman, Search Committee for
	of Cell Biology, Cornell University
1998-2000	Chair of Department
Chair of Department	Medical College

Memberships, Offices, and Committee Assignments in Professional Societies:

1981-	American Society for Photobiology
1982-	Society for Investigative Dermatology
1983-	American Association for the Advancement of
Science	
1983-	American Academy of Dermatology
1984-1996	New England Dermatological Association

Richard D. Granstein, M.D.

1985- 1992-1995 <b>Photobiology</b> 1994- 1995-2000 <b>Investigative Dermatology</b> 1995-2000 and Priorities, Academy of Medicine 1997-2000 Academy of Medicine 1997-1998 1998-2000 Steering Dermatology	American Federation for Clinical Research Counselor, American Society for American Society for Clinical Investigation Board of Directors, Society for Member, Committee on Long-range Planning Society for Investigative Dermatology Dermatologic Society of Greater New York New York Academy of Medicine Manhattan Metropolitan Dermatologic Society New York Dermatological Society Secretary, Dermatology Section, New York Member, Committee on Finances, Society for Investigative Dermatology President, Dermatology Section, New York Member, Skin Disease Research Agenda Committee, Society for Investigative Dermatology
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#### Editorial Boards and Editorial Positions

1991- 1992-1995 1992-1997 1996- <b>Surgery</b> 1995-1998	<i>Experimental Dermatology</i> <i>Regional Immunology</i> <i>Journal of Investigative Dermatology</i> <i>The Journal of Cutaneous Medicine and</i> <i>Associate Editor, Journal of Immunology</i>
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#### Major Research Interests:

1. Immunodermatology and photoimmunology, especially studies on the role of the cutaneous immune system in the recognition or non-recognition of malignancies.
2. Studies on the immunobiology of Langerhans cells, the effects of and non-ionizing radiation on immunologic function *in vitro* and *in vivo*, and effects and roles of polypeptide cytokines, neuropeptides and stress on immune functions in the skin.
3. Ocular immunology with an emphasis on the morphology and function of resident immunocompetent cells in the eyes and the role of immunomodulatory molecules in ocular immunity.

#### Research Funding:

Past:

Richard D. Granstein, M.D.

1982-83  
"PUVA-induced Skin  
Studies"  
1983-84  
doctoral Fellow  
Skin Cancer:  
1985-90  
"Activation of  
Cancers"  
1985-86  
P.I., "Use of Monoclonal  
Anti-interleukin 2 Receptor  
Antibody to Modulate  
Graft versus  
Host Disease in Mice"  
1987-90  
"Ocular Cells in the  
Suppression"  
1989-90  
of Keloids with  
Gamma Interferon"  
1992-98  
"Epidermal Antigen  
Presenting Cells and Tumor  
Immunity"  
1994- 95  
P.I., "An Examination of  
plus Long-wave  
ultraviolet Radiation on Murine  
Allograft Survival"  
Current:  
1994-  
NIH, R01 AR42429, P.I., "Langerhans  
Cells and Nerves: Bidirectional  
Signaling"  
1997-  
of  
1998-1999  
"Physiologic Responses to  
Shiseido Co., Ltd., P.I.,  
Stress"  
Teaching Experience:  
1982 - 1996 Attending Physician, Dermatology Service,  
Massachusetts General Hospital, Boston, Massachusetts

Dermatology Foundation, P.I.,  
Cancer: Experimental and Clinical  
NIH, IF32 CA07014, Post-  
(Individual NRSA), "PUVA-induced  
Experimental and Clinical Studies"  
NIH, 1K08 AM01425, P.I.,  
Suppression and UVR-induced Skin  
william F. Milton Fund,  
NIH, R01 EY07782, P.I.,  
Activation of Immunity and  
Genentech, Inc., P.I., "Treatment  
Dermatology Foundation,  
the Systemic Effect of Angelicin  
Ultraviolet Radiation on Murine  
Langerhans Cell Function"  
NIH, R01 AR44240, P.I., "Regulation

Richard D. Granstein, M.D.

1983 - 1985 (continuing)	Lecturer, Practical Dermatology Course
Boston,	medical education), Harvard Medical School,
Massachusetts	
1984 - 1994	Lecturer, Pathophysiology of Skin Course,
Harvard	
1985 - 1987	Medical School, Boston, Massachusetts
Harvard	Director, Pathophysiology of Skin Course,
1986 - 1988	Medical School, Boston, Massachusetts
Course,	Lecturer, Second Year Pathophysiology
Worcester,	University of Massachusetts Medical School,
Massachusetts	
1989-1992	Lecturer, Basic Immunology Course, Annual
Meeting of the	
1993	American Academy of Dermatology
and Skin Cancer	Director, Focus Session on Langerhans Cells
Dermatology	Annual Meeting of the American Academy of
1993	Lecturer, The Skin and the Nervous System,
Annual	Meeting of the American Academy of
Dermatology	
1994	Director, Forum on T Cells and Antigen
Presenting Cells of the	
Skin, Annual Meeting of the American	
Academy of Dermatology	
1994 - 1995	Lecturer, Immunology 200A (Graduate
Course), Harvard	Medical School
1995 -	Attending Physician, Dermatology Service,
New York Hospital-	Cornell Medical Center, New York, New York
1996	Director of Dermatology Section, Second
Year Pathophysiology	Course, Cornell University Medical College,
New York,	New York
1996	Director, Forum on T Cells and Antigen
Cells in the Skin, Annual	
Dermatology, Washington,	Meeting of the American Academy of
D.C.	
1997	Director, Forum on T Cells and Antigen
Cells in the Skin, Annual	
Dermatology,	Meeting of the American Academy of
1998	San Francisco, California
Cells in the Skin, Annual	Director, Forum on T Cells and Antigen
	Meeting of the American Academy of

Richard D. Granstein, M.D.

Dermatology, Orlando,  
Florida  
1999              Lecturer, Forum on T Cells and Antigen  
Cells in the Skin, Annual  
                    Meeting of the American Academy of  
Dermatology, Washington,  
D.C.  
2000              Lecturer, Forum on T Cells and Antigen  
Cells in the Skin, Annual  
                    Meeting of the American Academy of  
Dermatology, San  
Francisco, CA

Richard D. Granstein, M.D.

PUBLICATIONS - Richard D. Granstein, M.D.

I. Original Reports

1. Urist MR, Granstein RD, Nogami H, Svenson L, Murphy R. Transmembrane bone morphogenesis across multiple-walled diffusion chambers. *Arch Surg* 1977; 112:612-19.
2. Adrian RM, Murphy GF, Sato S, Granstein RD, Fitzpatrick TB, Sober AJ. Diffuse melanosis secondary to metastatic malignant melanoma. *J Am Acad Dermatol* 1981; 5:308-18.
3. Granstein RD, Morison WL, Kripke ML. The role of UVB radiation in the induction and elicitation of photocontact hypersensitivity to TCSA in the mouse. *J Invest Dermatol* 1983; 80:158-62.
4. Granstein RD, Morison WL, Kripke ML. The role of suppressor cells in the induction of murine photoallergic contact dermatitis and in its suppression by prior UVB radiation. *J Immunol* 1983; 130:2099-103.
5. Tominaga A, Lefort S, Mizel SB, Dambrauskas JT, Granstein RD, Lowy A, Benacerraf B, Greene MI. Molecular signals in antigen presentation. I. Therapeutic effects of interleukin 1 and 2 on ultraviolet radiation-treated antigen presenting cells in vivo and in vitro. *Clin Immunol Immunopathol* 1984; 29:282-83.
6. Granstein RD, Lowy A, Greene MI. Epidermal antigen presenting cells in activation of suppression: Identification of a new functional type of ultraviolet radiation-resistant epidermal cell. *J Immunol* 1984; 132:563-65.
7. Granstein RD, Tominaga A, Mizel SB, Parrish JA, Greene MI. Molecular signals in antigen presentation. II. Activation of cytolytic cells in vitro after ultraviolet radiation or combined gamma and ultraviolet radiation treatment of antigen presenting cells. *J Immunol* 1984; 132:2210-18.
8. Lowy A, Drebin JA, Monroe JG, Granstein RD, Greene MI. Genetically restricted antigen presentation for immunologic tolerance and suppression. *Nature* 1984; 308:373-75.
9. Granstein RD, Parrish JA, McAuliffe DJ, Waltenbaugh CR, Greene MI. Immunologic inhibition of ultraviolet radiation-induced tumor suppressor cell activity. *Science* 1984; 224:615-17.
10. Granstein RD. Epidermal I-J-bearing cells are responsible for transferable suppressor cell generation after

Richard D. Granstein, M.D.

- immunization of mice with ultraviolet radiation-treated epidermal cells. *J Invest Dermatol* 1985; 84:206-09.
11. Granstein RD, Greene MI. Splenic I-J bearing antigen presenting cells in activation of suppression: further characterization. *Cell Immunol* 1985; 91:12-20.
  12. Polla L, Margolis R, Goulston C, Parrish JA, Granstein RD. Enhancement of the elicitation phase of the murine contact hypersensitivity response by local ultraviolet radiation. *J Invest Dermatol*. 1986; 86:13-17.
  13. Granstein RD, Margolis R, Mizel SB, Sauder DN. In vivo inflammatory activity of epidermal cell-derived thymocyte activating factor and interleukin-1 in the mouse. *J Clin Invest* 1986; 77:1020-27.
  14. Granstein RD, Goulston C, Gaulton G. Prolongation of murine skin allograft survival by immunologic manipulation with anti-interleukin-2 receptor antibody. *J Immunol* 1986; 136:898-02.
  15. Granstein RD, Smith L, Parrish JA. Prolongation of murine skin allograft survival by the systemic effects of 8-methoxysoralen and longwave ultraviolet radiation (PUVA). *J Invest Dermatol* 1987; 88:424-28.
  16. Granstein RD, Murphy GF, Margolis RJ, Amento EP. Gamma interferon inhibits collagen synthesis in vivo in the mouse. *J Clin Invest* 1987; 79:1254-58.
  17. Granstein RD, Askari M, Whitaker D, Murphy GF. Epidermal cells in activation of suppressor lymphocytes: further characterization. *J Immunol* 1987; 138:4055-62.
  18. Granstein RD, and Sauder DN. Whole-body exposure to ultraviolet radiation results in increased serum interleukin-1 activity in humans. *Lymphokine Res* 1987; 6:187-193.
  19. Latina M, Flotte T, Crean E, Sherwood ME, Granstein RD. Immunohistochemical staining of the human anterior segment: evidence that resident cells play a role in immunologic responses. *Arch Ophthalmol*. 1988; 106:95-99.
  20. Sharpe RJ, Margolis RJ, Askari M, Amento EP, Granstein RD. Induction of dermal and subcutaneous inflammation by recombinant cachectin/tumor necrosis factor (TNF alpha) in the mouse. *J Invest Dermatol* 1988; 91:353-57.
  21. Gallo RL, Kochevar IE, Granstein RD. Ultraviolet radiation induces a change in cell membrane potential *in vitro*: a possible signal for ultraviolet radiation induced alteration in cell activity. *Photochem Photobiol* 1989; 49:655-62.

Richard D. Granstein, M.D.

22. Gallo RL, Granstein RD. The inhibition of allergic contact dermatitis and ultraviolet radiation-induced tissue swelling in the mouse by topical application of amiloride. *Arch Dermatol* 1989; 125:502-56.
23. Granstein RD, Deak MR, Jacques SL, Margolis RJ, Flotte TJ, Whitaker D, Long FH, Amento EP. The systemic administration of gamma interferon inhibits collagen synthesis and acute inflammation in a murine skin wounding model. *J Invest Dermatol* 1989; 93:18-27.
24. Margolis RJ, Sherwood M, Maytum DJ, Granstein RD, Weinstock MA, Parrish JA, Gange RW. Longwave ultraviolet radiation (UVA, 320-400 nm) - induced tan protects human skin against further UVA exposure. *J Invest Dermatol* 1989; 93:713-18.
25. Granstein RD, Staszewski R, Knisely TL, Zeira E, Nazareno R, Latina M, Albert DM. Aqueous humor contains transforming growth factor beta and a small (<3500 daltons) inhibitor of thymocyte proliferation. *J Immunol* 1990; 144:3021-27.
26. Granstein RD, Rook A, Flotte TJ, Haas A, Gallo RL, Jaffe HS, Amento EP. A controlled trial of intralesional recombinant gamma interferon in the treatment of keloidal scarring: clinical and histologic findings. *Arch Dermatol* 1990; 126:1295-1302.
27. Gallo RL, Staszewski R, Sauder DN, Knisely TL, Granstein RD. Regulation of GM-CSF and IL-3 production from the murine keratinocyte cell line PAM 212 following exposure to ultraviolet radiation. *J Invest Dermatol* 1991; 97:203-9.
28. Grabbe S, Bruvers S, Gallo RL, Knisely TL, Nazareno R, Granstein RD. Tumor antigen presentation by murine epidermal cells. *J Immunol*, 1991; 146:3656-61.
29. Knisely TL, Anderson TM, Sherwood ME, Flotte TJ, Albert DM, Granstein RD. Morphologic and ultrastructural examination of I-A<sub>+</sub> cells in the murine iris. *Invest Ophthalmol Vis Sci* 1991; 32:2423-31.
30. Knisely TL, Bleicher PA, Vibbard CA, Granstein RD. Production of latent transforming growth factor-beta and other inhibitory factors by cultured murine iris and ciliary body cell. *Curr Eye Res* 1991; 10:761-71.
31. Gallo RL, Grabbe S, Choi SS, Bleicher P, Granstein RD. Cyclosporin increases GM-CSF activity and gene expression in murine keratinocytes. *J Invest Dermatol* 1992; 98:274-8.
32. Grabbe S, Bruvers S, Lindgren AM, Hosoi J, Tan KC, Granstein RD. Tumor antigen presentation by epidermal antigen presenting cells in the mouse: Modulation by granulocyte-

Richard D. Granstein, M.D.

- macrophage colony stimulating factor, tumor necrosis factor- $\alpha$ , and ultraviolet radiation. *J Leuk Biol* 1992; 52:209-17.
33. Reppert SM, Weaver DR, Stehle JG, Rivkees SA, Grabbe S, Granstein RD. Molecular cloning of an orphan G protein-coupled receptor that is highly expressed in lymphocytes and proliferative areas of developing brain. *Mol Cell Neurosci* 1992; 3:206-14.
  34. Horvath KA, Granstein RD. PUVA augments cyclosporine A-mediated rat cardiac allograft survival. *J Surg Res* 1992; 52:565-70.
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